

RENEWABLE ENERGY AT THE DEMA ENERGY OFFICE

AZ ARNG – AZ/DEMA

Overview of Renewable Solar Projects

The DEMA Energy Team has always led the way in new technologies and leading edge programs. Our solar achievements include both photovoltaic arrays and wind turbines, which produce reliable green energy which is grid-tied to several facilities – reducing the energy we have to purchase from utility providers. Many of our renewable projects were funded by special grants and programs that were available several years ago, when we began implementing renewable projects. A great example is the ECObuilding, with solar photovoltaic panels and a solar absorption chiller – all coming from special utility programs. We have almost 160 KW of combined renewable energy generation currently operating on our facilities across Arizona.

Siting of Renewable Systems and Solar Projects

Our biggest problem has been finding a place to install solar arrays. We have very limited space for ground mounting, close enough to buildings so we can net-meter. Rooftops are a problem for two major reasons. One is that we simply cannot get enough foot print on roofs to match a building's base load. Secondly, we do not like to install a system on a roof that we might have to replace or rebuild in seven to ten years (about the life of a built-up roof for us). Standing seam metal roofs are preferred, but not all our buildings have them. Roof penetrations and ruining a roof warranty is always an issue.

Production and Experience with Solar Photovoltaic Systems

We have had good luck with production from most of our photovoltaic systems. Our experience has shown us that the inverters are the weakest link – purchase of longer warranty periods for inverters is very beneficial. Our technicians are trained and have become very experienced doing our own installations, when feasible. We also do our own repair work and maintenance on solar PV systems to save costs

Future Involvement with Solar Photovoltaic Systems

DEMA is always looking for grants and partnerships to do more PV projects. We are currently looking into two such opportunities to take advantage leveraging utility rebates.

Fellow Agencies and Partnerships

We share our knowledge quite openly with other National Guard Agencies and States. We have a very successful track record with partnerships – government as well as private sector.

Proposed Solutions to Obstacles Installing Solar Photovoltaic Systems

We require evaluation of solar/ renewable technologies on all new construction (MILcon) projects – and, solar technologies help to get LEED points. (All our new facilities are required to be - at a minimum - USGBC LEED Silver).